GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: June 25, 2003, 14:20:41 ; Search time 31.2 Seconds
(without alignments)
444.169 Million cell updates/sec

Title: US-09-622-613B-4
Perfect score: 579
Sequence: 1 QDWLTFQKKHLTNTRDVDCN.....TFCVTCENQAPVHFVGVGHC 104

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_101002:*
1: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
2: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
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10: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
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13: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1992.DAT:*
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22: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:*
23: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	571	98.6	104	20	AAY28866	Recombinant RaPLR1
2	571	98.6	105	20	AAY28869	Recombinant Met(-1
3	569	98.3	104	20	AAY28865	Rana pipiens liver
4	569	98.3	105	20	AAY28867	Recombinant Met(-1
5	569	98.3	127	20	AAY28879	Rana pipiens Clone
6	564	97.4	104	20	AAY28870	Recombinant RaPLR1
7	564	97.4	105	20	AAY28871	Recombinant Met(-1
8	549	94.8	104	18	AAW06544	Antitumour protein
9	547	94.5	104	18	AAW30301	Recombinant onc pr
10	547	94.5	104	22	AAB31666	Amino acid sequenc
11	547	94.5	379	18	AAW35126	R. pipiens recombi
12	546	94.3	104	18	AAW30302	Recombinant onc pr
13	544	94.0	104	12	AAR12344	Protein with activ
14	544	94.0	104	15	AAR47303	ONCONASE (pharmace
15	544	94.0	104	17	AAW00736	Protein derived fr
16	544	94.0	104	18	AAW06543	Antitumour protein
17	544	94.0	104	18	AAW14065	Onconase (R'TM) pro
18	544	94.0	104	20	AAY33322	Frog onconase prot
19	544	94.0	104	20	AAW88233	Rana pipiens RNase
20	544	94.0	104	22	AAB31667	Amino acid sequenc
21	544	94.0	105	18	AAW35123	R. pipiens recombi
22	544	94.0	105	20	AAY39400	Recombinant frog O
23	544	94.0	355	18	AAW35125	R. pipiens recombi
24	544	94.0	358	18	AAW35130	R. pipiens recombi
25	542	93.6	106	18	AAW35122	R. pipiens recombi
26	542	93.6	107	18	AAW35117	R. pipiens recombi
27	542	93.6	112	18	AAW35118	R. pipiens recombi
28	542	93.6	251	18	AAW35134	R. pipiens recombi
29	542	93.6	254	18	AAW35135	R. pipiens recombi
30	542	93.6	355	18	AAW35129	R. pipiens recombi
31	542	93.6	355	18	AAW35133	R. pipiens recombi
32	542	93.6	366	18	AAW35132	R. pipiens recombi
33	539	93.1	104	18	AAW18224	Antitumour generic
34	537	92.7	105	18	AAW35115	R. pipiens recombi
35	537	92.7	105	18	AAW35116	R. pipiens recombi
36	533	92.1	358	18	AAW35127	R. pipiens recombi
37	533	92.1	365	18	AAW35131	R. pipiens recombi
38	518	89.5	107	18	AAW35120	R. pipiens recombi
39	481	83.1	360	18	AAW35128	R. pipiens recombi
40	474.5	82.0	111	18	AAW35121	R. pipiens recombi
41	436	75.3	83	18	AAW35119	R. pipiens clone R
42	436	75.3	83	20	AAW88234	Rana pipiens RNase
43	283	48.9	111	20	AAY33321	Frog lectin protei
44	276.5	47.8	110	20	AAY28874	Recombinant RaCOR1
45	276.5	47.8	111	20	AAY28876	Recombinant Met(-1

ALIGNMENTS

RESULT 1
AAY28866
ID AAY28866 standard; Protein; 104 AA.
XX
AC AAY28866;
XX
DT 25-JAN-2000 (first entry)
XX
DE Recombinant RaPLR1 Met23Leu amino acid sequence.
XX
KW Recombinant Rana pipiens ribonuclease; RaPLR1 Met23Leu; covalently bound;
KW LL2 antibody; ligand binding moiety; CD22; cancerous B cell; RNase;
KW Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
KW autoimmune disease.
XX
OS Rana pipiens.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Misc-difference 23
FT /note= "Wild type Met replaced with Leu"
XX
PN WO9950398-A2.
XX
PD 07-OCT-1999.
XX
PF 26-MAR-1999; 99WO-US06641.
XX
PR 27-MAR-1998; 98US-0079751.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX

PI Newton DL, Rybak SM;
XX
DR WPI; 1999-610847/52.
DR N-PSDB; AAZ08125.
XX
PT New recombinant ribonucleases, used for killing target cells, e.g. for
PT treating cancers, viral infections or autoimmune diseases -
XX
PS Claim 34; Page 56; 71pp; English.
XX
CC The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
CC protein with Met23Leu. Carboxy terminal end of recombinant RaPLR1 has a
CC covalently bound ligand binding moiety, which can be a LL2 antibody
CC directed against CD22 on cancerous B cells or human chorionic
CC gonadotrophin (hCG) effective against Kaposi's sarcoma cells. Recombinant
CC ribonucleases can be expressed in bacteria without an N-terminal
CC methionine due to the presence of a signal peptide that is cleaved by
CC bacteria. The soluble expression of ribonuclease allows the proteins to
CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
CC proteins. They can be used for treatment of cancer and autoimmune
CC diseases.
XX
SQ Sequence 104 AA;

Query Match 98.6%; Score 571; DB 20; Length 104;
Best Local Similarity 99.0%; Pred. No. 2.4e-62;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy          1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
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Db          1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
              |||||||||||||||||||||||||||||||||||||||||||||
Db         61 SEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
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RESULT 2
AAY28869
ID AAY28869 standard; Protein; 105 AA.
XX
AC AAY28869;
XX
DT 25-JAN-2000 (first entry)
XX
DE Recombinant Met(-1) RaPLR1 Met23Leu-(His)6 protein.
XX
KW Recombinant Met(-1) Rana pipiens ribonuclease Met23Leu-(His)6; RaPLR1;
KW CD22; covalently bound; LL2 antibody; ligand binding moiety; RNase;
KW cancerous B cell; Kaposi's sarcoma; human chorionic gonadotrophin; hCG;
KW signal peptide; recombinant ribonuclease; cytotoxic fusion protein;
KW cancer; frog; autoimmune disease.
XX
OS Rana pipiens.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Misc-difference 1
FT /note= "(His)6 histidine tag attached to N-terminal Met"
FT Misc-difference 1
FT /note= "Met not found in wild type RaPLR1"
FT Misc-difference 24
FT /note= "Wild type Met replaced with Leu"
XX
PN WO9950398-A2.
XX
PD 07-OCT-1999.
XX
PF 26-MAR-1999; 99WO-US06641.
XX
PR 27-MAR-1998; 98US-0079751.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Newton DL, Rybak SM;
XX
DR WPI; 1999-610847/52.
DR N-PSDB; AAZ08127.
XX
PT New recombinant ribonucleases, used for killing target cells, e.g. for
PT treating cancers, viral infections or autoimmune diseases -
XX
PS Claim 4; Page 59; 71pp; English.
XX
CC The present sequence is a recombinant Rana pipiens ribonuclease protein
CC (RaPLR1) with Met at position 1 attached to (His)6 tag and Met24Leu.
CC Carboxy terminal end of recombinant RaPLR1 has a covalently bound ligand
CC binding moiety, which can be a LL2 antibody directed against CD22 on
CC cancerous B cells or human chorionic gonadotrophin (hCG) effective
CC against Kaposi's sarcoma cells. Recombinant ribonucleases can be
CC expressed in bacteria without an N-terminal methionine due to the
CC presence of a signal peptide that is cleaved by bacteria. The soluble
CC expression of ribonuclease allows the proteins to be fused in-frame with
CC ligand binding moieties to form cytotoxic fusion proteins. They can be
CC used for treatment of cancer and autoimmune diseases.
XX
SQ Sequence 105 AA;

Query Match 98.6%; Score 571; DB 20; Length 105;
Best Local Similarity 99.0%; Pred. No. 2.4e-62;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Db          2 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
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Db         62 SEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 105
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RESULT 3
AAY28865
ID AAY28865 standard; Protein; 104 AA.
XX
AC AAY28865;
XX
DT 25-JAN-2000 (first entry)
XX
DE Rana pipiens liver ribonuclease (RaPLR1).
XX
KW Rana pipiens liver ribonuclease; RaPLR1; covalently bound; LL2 antibody;
KW ligand binding moiety; CD22; cancerous B cell; Kaposi's Sarcoma; frog;
KW human chorionic gonadotrophin; hCG; recombinant ribonuclease; RNase;
KW signal peptide; cytotoxic fusion protein; cancer; autoimmune disease.
XX
OS Rana pipiens.
XX
PN WO9950398-A2.
XX
PD 07-OCT-1999.
XX
PF 26-MAR-1999; 99WO-US06641.
XX
PR 27-MAR-1998; 98US-0079751.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Newton DL, Rybak SM;
XX
DR WPI; 1999-610847/52.
DR N-PSDB; AAZ08124.
XX
PT New recombinant ribonucleases, used for killing target cells, e.g. for
PT treating cancers, viral infections or autoimmune diseases -
XX

```
PS   Claim 1; Page 55; 71pp; English.
XX
CC   The present sequence is Rana pipiens liver ribonuclease (RaPLR1)
CC   protein. Carboxy terminal end of RaPLR1 has a covalently bound
CC   ligand binding moiety, which can be a LL2 antibody directed against
CC   CD22 on cancerous B cells or human chorionic gonadotrophin (hCG)
CC   effective against Kaposi's Sarcoma cells. Recombinant ribonucleases can
CC   be expressed in bacteria without an N-terminal methionine due to the
CC   presence of a signal peptide that is cleaved by bacteria. The soluble
CC   expression of ribonuclease allows the proteins to be fused in-frame with
CC   ligand binding moieties to form cytotoxic fusion proteins. They can be
CC   used for treatment of cancer and autoimmune diseases.
XX
SQ   Sequence   104 AA;

  Query Match             98.3%;  Score 569;  DB 20;  Length 104;
  Best Local Similarity   98.1%;  Pred. No. 4.2e-62;
  Matches  102;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

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              ||||||||||||||||||||||:||||||||||||||||||||||||||||||||||||
Db          1 QDWLTFQKKHLTNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
              |||||||||||||||||||||||||||||||||||||||||||||
Db         61 SEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104


RESULT 4
AAY28867
ID   AAY28867 standard; Protein; 105 AA.
XX
AC   AAY28867;
XX
DT   25-JAN-2000  (first entry)
XX
DE   Recombinant Met(-1) RaPLR1.
XX
KW   Recombinant Met(-1) Rana pipiens ribonuclease; RaPLR1; CD22; RNase;
KW   covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
KW   Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
KW   recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
KW   autoimmune disease.
XX
OS   Rana pipiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 1
FT                   /note= "Met not found in wild type RaPLR1"
XX
PN   WO9950398-A2.
XX
PD   07-OCT-1999.
XX
PF   26-MAR-1999;   99WO-US06641.
XX
PR   27-MAR-1998;   98US-0079751.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Newton DL,  Rybak SM;
XX
DR   WPI; 1999-610847/52.
DR   N-PSDB; AAZ08126.
XX
PT   New recombinant ribonucleases, used for killing target cells, e.g. for
PT   treating cancers, viral infections or autoimmune diseases -
XX
PS   Claim 34; Page 57; 71pp; English.
XX
CC   The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
CC   protein with Met at position 1. Carboxy terminal end of recombinant
CC   RaPLR1 has a covalently bound ligand binding moiety, which can be a LL2
CC   antibody directed against CD22 on cancerous B cells or human chorionic
CC   gonadotrophin (hCG) effective against Kaposi's sarcoma cells. Recombinant
CC   ribonucleases can be expressed in bacteria without an N-terminal
CC   methionine due to the presence of a signal peptide that is cleaved by
CC   bacteria. The soluble expression of ribonuclease allows the proteins to
CC   be fused in-frame with ligand binding moieties to form cytotoxic fusion
CC   proteins. They can be used for treatment of cancer and autoimmune
CC   diseases.
XX
SQ   Sequence   105 AA;

  Query Match             98.3%;  Score 569;  DB 20;  Length 105;
  Best Local Similarity   98.1%;  Pred. No. 4.3e-62;
  Matches  102;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

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Db          2 QDWLTFQKKHLTNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
              |||||||||||||||||||||||||||||||||||||||||||||
Db         62 SEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 105


RESULT 5
AAY28879
ID   AAY28879 standard; Protein; 127 AA.
XX
AC   AAY28879;
XX
DT   25-JAN-2000  (first entry)
XX
DE   Rana pipiens Clone 5a1b ribonuclease.
XX
KW   Rana pipiens ribonuclease Clone 5a1b; RaPLR1; covalently bound; RNase;
KW   LL2 antibody; ligand binding moiety; CD22; cancerous B cell; onconase;
KW   Kaposi's Sarcoma; human chorionic gonadotrophin; hCG; cancer;
KW   recombinant ribonuclease; frog; signal peptide; cytotoxic fusion protein;
KW   autoimmune disease.
XX
OS   Rana pipiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..23
FT                   /label= Signal_peptide
FT                   /note= "Putative"
FT   Protein         24..127
FT                   /label= Rana_pipiens_Clone_5a1b_ribonuclease
XX
PN   WO9950398-A2.
XX
PD   07-OCT-1999.
XX
PF   26-MAR-1999;   99WO-US06641.
XX
PR   27-MAR-1998;   98US-0079751.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Newton DL,  Rybak SM;
XX
DR   WPI; 1999-610847/52.
DR   N-PSDB; AAZ08136.
XX
PT   New recombinant ribonucleases, used for killing target cells, e.g. for
PT   treating cancers, viral infections or autoimmune diseases -
XX
PS   Disclosure; Page 69; 71pp; English.
XX
CC   The present sequence is a Rana pipiens Clone 5a1b ribonuclease (RaPLR1).
CC   It is encoded by Clone 5a1b cDNA obtained from Rana pipiens liver mRNA
CC   library. It exhibits differences with Onconase (RTM) at amino acid
```

```
CC   residues 11, 20, 85 and 103. Carboxy terminal end of RaPLR1 has a
CC   covalently bound ligand binding moiety, which can be a LL2 antibody
CC   directed against CD22 on cancerous B cells or human chorionic
CC   gonadotrophin (hCG) effective against Kaposi's Sarcoma cells. Recombinant
CC   ribonucleases can be expressed in bacteria without an N-terminal
CC   methionine due to the presence of a signal peptide that is cleaved by
CC   bacteria. The soluble expression of ribonuclease allows the proteins to
CC   be fused in-frame with ligand binding moieties to form cytotoxic fusion
CC   proteins. They can be used for treatment of cancer and autoimmune
CC   diseases.
XX
SQ   Sequence   127 AA;

  Query Match             98.3%;  Score 569;  DB 20;  Length 127;
  Best Local Similarity   98.1%;  Pred. No. 5.4e-62;
  Matches  102;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
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Db         24 QDWLTFQKKHLTNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 83

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
              |||||||||||||||||||||||||||||||||||||||||||||
Db         84 SEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 127


RESULT 6
AAY28870
ID   AAY28870 standard; Protein; 104 AA.
XX
AC   AAY28870;
XX
DT   25-JAN-2000  (first entry)
XX
DE   Recombinant RaPLR1 Gln1Ser amino acid sequence.
XX
KW   Recombinant Rana pipiens ribonuclease; RaPLR1 Gln1Ser; covalently bound;
KW   LL2 antibody; ligand binding moiety; CD22; cancerous B cell; frog;
KW   Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
KW   recombinant ribonuclease; cytotoxic fusion protein; cancer; RNase;
KW   autoimmune disease.
XX
OS   Rana pipiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 1
FT                   /note= "Wild type Gln replaced with Ser"
XX
PN   WO9950398-A2.
XX
PD   07-OCT-1999.
XX
PF   26-MAR-1999;   99WO-US06641.
XX
PR   27-MAR-1998;   98US-0079751.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Newton DL,  Rybak SM;
XX
DR   WPI; 1999-610847/52.
DR   N-PSDB; AAZ08128.
XX
PT   New recombinant ribonucleases, used for killing target cells, e.g. for
PT   treating cancers, viral infections or autoimmune diseases -
XX
PS   Claim 34; Page 60; 71pp; English.
XX
CC   The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
CC   protein with Gln1Ser. Carboxy terminal end of recombinant RaPLR1 has a
CC   covalently bound ligand binding moiety, which can be a LL2 antibody
CC   directed against CD22 on cancerous B cells or human chorionic
CC   gonadotrophin (hCG) effective against Kaposi's sarcoma cells. Recombinant
CC   ribonucleases can be expressed in bacteria without an N-terminal
CC   methionine due to the presence of a signal peptide that is cleaved by
CC   bacteria. The soluble expression of ribonuclease allows the proteins to
CC   be fused in-frame with ligand binding moieties to form cytotoxic fusion
CC   proteins. They can be used for treatment of cancer and autoimmune
CC   diseases.
XX
SQ   Sequence   104 AA;

  Query Match             97.4%;  Score 564;  DB 20;  Length 104;
  Best Local Similarity   98.1%;  Pred. No. 1.7e-61;
  Matches  101;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

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Db          2 DWLTFQKKHLTNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 61

Qy         62 EFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
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Db         62 EFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104


RESULT 7
AAY28871
ID   AAY28871 standard; Protein; 105 AA.
XX
AC   AAY28871;
XX
DT   25-JAN-2000  (first entry)
XX
DE   Recombinant Met(-1) RaPLR1 Gln1Ser amino acid sequence.
XX
KW   Recombinant Met(-1) Rana pipiens ribonuclease Gln1Ser; RaPLR1; CD22;
KW   covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
KW   Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
KW   recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
KW   autoimmune disease; RNase.
XX
OS   Rana pipiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 1
FT                   /note= "Met not found in wild type RaPLR1"
FT   Misc-difference 2
FT                   /note= "Wild type Gln replaced with Ser"
XX
PN   WO9950398-A2.
XX
PD   07-OCT-1999.
XX
PF   26-MAR-1999;   99WO-US06641.
XX
PR   27-MAR-1998;   98US-0079751.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Newton DL,  Rybak SM;
XX
DR   WPI; 1999-610847/52.
DR   N-PSDB; AAZ08129.
XX
PT   New recombinant ribonucleases, used for killing target cells, e.g. for
PT   treating cancers, viral infections or autoimmune diseases -
XX
PS   Claim 34; Page 61; 71pp; English.
XX
CC   The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
CC   protein with Met at position 1 and Gln2Ser. Carboxy terminal end of
CC   recombinant RaPLR1 has a covalently bound ligand binding moiety, which
CC   can be a LL2 antibody directed against CD22 on cancerous B cells or human
CC   chorionic gonadotrophin (hCG) effective against Kaposi's sarcoma cells.
```

```
CC   Recombinant ribonucleases can be expressed in bacteria without an N-
CC   terminal methionine due to the presence of a signal peptide that is
CC   cleaved by bacteria. The soluble expression of ribonuclease allows the
CC   proteins to be fused in-frame with ligand binding moieties to form
CC   cytotoxic fusion proteins. They can be used for treatment of cancer and
CC   autoimmune diseases.
XX
SQ   Sequence   105 AA;

  Query Match            97.4%;  Score 564;  DB 20;  Length 105;
  Best Local Similarity  98.1%;  Pred. No. 1.8e-61;
  Matches  101;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 DWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTF 61
              ||||||||||||||||||||:||||||||||||||||||||||||||||||||||||||
Db          3 DWLTFQKKHLTNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 62

Qy         62 EFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
              |||||||||||||||||||||||||||||||||||||||||||
Db         63 EFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 105


RESULT 8
AAW06544
ID   AAW06544 standard; protein; 104 AA.
XX
AC   AAW06544;
XX
DT   22-AUG-1997  (first entry)
XX
DE   Antitumour protein from Rana pipiens oocytes.
XX
KW   Tumour; chemotherapy; radiotherapy; frog.
XX
OS   Rana pipiens.
XX
PN   WO9639428-A1.
XX
PD   12-DEC-1996.
XX
PF   03-JUN-1996;   96WO-US08304.
XX
PR   06-JUN-1995;   95US-0467955.
XX
PA   (ALFA-) ALFACELL CORP.
XX
PI   Ardelt WJ;
XX
DR   WPI; 1997-043063/04.
XX
PT   Antitumour proteins from Rana pipiens oocyte(s) - have fewer
PT   disadvantages than chemotherapy, surgery and radiotherapy
XX
PS   Claim 8; Page 28; 45pp; English.
XX
CC   The present sequence is a specifically claimed example of an
CC   antitumour protein from the generic protein in AAW18224, with the
CC   molecular weight 12000. This is one of two preferred proteins (the
CC   other in AAW06543) that have been isolated from Rana pipiens oocytes.
CC   Both proteins have a blocked amino terminal group and are essentially
CC   free of carbohydrates. The proteins are used to treat tumours. Use of
CC   the peptides has fewer disadvantages than chemotherapy, radiotherapy
CC   and surgery in the treatment of tumours.
XX
SQ   Sequence   104 AA;

  Query Match            94.8%;  Score 549;  DB 18;  Length 104;
  Best Local Similarity  94.2%;  Pred. No. 1.2e-59;
  Matches   98;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
              :|||||||||:||||||||||:||||||||||||||||||||||||||||||||||||||
Db          1 EDWLTFQKKHVTNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
              |||||||||||||||||||||||| |||||||||||||||| |
Db         61 SEFYLSDCNVTSRPCKYKLKKSTNKFCVTCENQAPVHFVGVGRC 104


RESULT 9
AAW30301
ID   AAW30301 standard; protein; 104 AA.
XX
AC   AAW30301;
XX
DT   09-JUN-1998  (first entry)
XX
DE   Recombinant onc protein.
XX
KW   Onc; oncanase; ribonuclease; frog; antitumour; pancreatic cancer;
KW   human immunodeficiency virus type-1; HIV1; replication.
XX
OS   Rana pipiens.
XX
PN   WO9738112-A1.
XX
PD   16-OCT-1997.
XX
PF   04-APR-1997;   97WO-US05675.
XX
PR   04-APR-1996;   96US-0626288.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Ardelt W,  Boix E,  Vasandani VM,  Wu YN,  Youle RJ;
XX
DR   WPI; 1997-512725/47.
XX
PT   Recombinant Onc protein with glutamine residue at position 1 -
PT   useful as antitumour and antiviral agent, also as cell culture
PT   selection agent
XX
PS   Claim 1; Page 28; 35pp; English.
XX
CC   This sequence represents a recombinant Onc protein comprising a 104 amino
CC   acid sequence having Gln at position 1. Onc, a ribonuclease from Rana
CC   pipiens oocytes, is known as an antitumour agent (e.g. for treating
CC   pancreatic cancer) and inhibitor of human immunodeficiency virus type-1
CC   replication.  It can be used therapeutically or as a cell-culture
CC   selection agent, e.g. to identify gene therapy compositions able to
CC   inhibit tumour growth.
XX
SQ   Sequence   104 AA;

  Query Match            94.5%;  Score 547;  DB 18;  Length 104;
  Best Local Similarity  94.2%;  Pred. No. 2.1e-59;
  Matches   98;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
              ||||||||||:||||||||:||:||||||||||||||||||||||||||||||||||||||
Db          1 QDWLTFQKKHITNTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
              |||||||||||||||||||||||| |||||||||||||||| |
Db         61 SEFYLSDCNVTSRPCKYKLKKSTNKFCVTCENQAPVHFVGVGSC 104


RESULT 10
AAB31666
ID   AAB31666 standard; protein; 104 AA.
XX
AC   AAB31666;
XX
DT   30-APR-2001  (first entry)
XX
DE   Amino acid sequence of a frog ribonuclease protein.
```

```
XX
KW   Frog; ribonuclease; ranpirnase; RNase.
XX
OS   Rana pipiens.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   1
FT                   /note= "this Gln is autocyclised to pyroglutamic acid"
XX
PN   US6175003-B1.
XX
PD   16-JAN-2001.
XX
PF   10-SEP-1999;   99US-0394268.
XX
PR   10-SEP-1999;   99US-0394268.
XX
PA   (ALFA-) ALFACELL CORP.
XX
PI   Saxena SK;
XX
DR   WPI; 2001-167808/17.
XX
PT   New nucleic acids encoding a ribonuclease (Rnase), useful for the
PT   precise targeting of Rnase to a predetermined cell receptor  -
XX
PS   Claim 1; Columns 5-6; 7pp; English.
XX
CC   The present sequence represents a frog ribonuclease protein (ranpirnase)
CC   (RNase). The specification describes a synthetic ribonuclease protein,
CC   in which the addition of cysteine in the ribonuclease facilitates the
CC   chemical linking of a targeting molecule by the single reactive
CC   sulfhydryl group. The specification also describes a method for the
CC   production of ranpirnase using DNA technology instead of processing
CC   biological material. The re-engineering of the protein molecule allows
CC   easier attachment to a targeting molecule thereby making it possible for
CC   the ribonuclease to be delivered to a particular cell receptor where it
CC   might be most effective.
XX
SQ   Sequence   104 AA;

  Query Match             94.5%;  Score 547;  DB 22;  Length 104;
  Best Local Similarity   94.2%;  Pred. No. 2.1e-59;
  Matches   98;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
              ||||||||||:||||||||:||:||||||||||||||||||||||||||||||||||||||
Db          1 QDWLTFQKKHITNTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
                ||||||||||||||||||||| |||||||||||||||| |
Db         61 SEFYLSDCNVTSRPCKYKLKKSTNKFCVTCENQAPVHFVGVGSC 104


RESULT 11
AAW35126
ID   AAW35126 standard; Protein; 379 AA.
XX
AC   AAW35126;
XX
DT   20-APR-1998  (first entry)
XX
DE   R. pipiens recombinant RNase rOnc fusion protein 2.
XX
KW   RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
KW   tumour cell growth; frog.
XX
OS   Rana pipiens.
OS   Synthetic.
XX
PN   WO9731116-A2.
XX
PD   28-AUG-1997.
XX
PF   19-FEB-1997;   97WO-US02588.
XX
PR   21-FEB-1996;   96US-0011800.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Boque L,  Newton DL,  Rybak SM,  Wlodawer A;
XX
DR   WPI; 1997-435168/40.
DR   N-PSDB; AAT94964.
XX
PT   Ribonuclease molecules based on native Onconase - used for killing
PT   cells, particularly tumour cells
XX
PS   Disclosure; Page 68; 90pp; English.
XX
CC   Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
CC   (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
CC   novel ribonuclease molecules are highly cytotoxic and can be used alone
CC   or to form chemical conjugates or to target recombinant immunofusions.
CC   They are used particularly for decreasing tumour cell growth. They can
CC   also be used for cell separation in vitro by selectively killing unwanted
CC   types of cells, e.g. in bone marrow prior to transplantation into a
CC   patient undergoing marrow ablation by radiation, or for killing leukaemia
CC   cells or T-cells that would cause graft versus host disease. The toxins
CC   can also be used to selectively kill unwanted cells in culture. The new
CC   ribonucleases have increased cytotoxic activity compared to nOnc and
CC   also lower immunogenicity in humans.
XX
SQ   Sequence   379 AA;

  Query Match             94.5%;  Score 547;  DB 18;  Length 379;
  Best Local Similarity   94.2%;  Pred. No. 1.1e-58;
  Matches   98;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
              ||||||||||:||||||||:||:||||||||||||||||||||||||||||||||||||||
Db         26 QDWLTFQKKHITNTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 85

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
                ||||||||||||||||||||| |||||||||||||||| |
Db         86 SEFYLSDCNVTSRPCKYKLKKSTNKFCVTCENQAPVHFVGVGSC 129


RESULT 12
AAW30302
ID   AAW30302 standard; protein; 104 AA.
XX
AC   AAW30302;
XX
DT   09-JUN-1998  (first entry)
XX
DE   Recombinant onc protein.
XX
KW   Onc; oncanase; ribonuclease; frog; antitumour; pancreatic cancer;
KW   human immunodeficiency virus type-1; HIV1; replication.
XX
OS   Rana pipiens.
OS   Synthetic
XX
FH   Key             Location/Qualifiers
FT   Modified-site   1
FT                   /note= "pyroglutamic acid; especially
FT                           2-pyrrolidone-5-carboxylic acid or
FT                           5-oxo-2-pyrrolidinecarboxylic acid"
XX
PN   WO9738112-A1.
XX
PD   16-OCT-1997.
XX
PF   04-APR-1997;   97WO-US05675.
XX
```

PR 04-APR-1996; 96US-0626288.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Ardelt W, Boix E, Vasandani VM, Wu YN, Youle RJ;
XX
DR WPI; 1997-512725/47.
XX
PT Recombinant Onc protein with glutamine residue at position 1 -
PT useful as antitumour and antiviral agent, also as cell culture
PT selection agent
XX
PS Claim 6; Page 28-29; 35pp; English.
XX
CC This sequence represents a recombinant Onc protein comprising a 104 amino
CC acid sequence having Gln at position 1. Onc, a ribonuclease from Rana
CC pipiens oocytes, is known as an antitumour agent (e.g. for treating
CC pancreatic cancer) and inhibitor of human immunodeficiency virus type-1
CC replication. It can be used therapeutically or as a cell-culture
CC selection agent, e.g. to identify gene therapy compositions able to
CC inhibit tumour growth.
XX
SQ Sequence 104 AA;

Query Match 94.3%; Score 546; DB 18; Length 104;
Best Local Similarity 94.2%; Pred. No. 2.8e-59;
Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

Qy 1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
:|||||||||:|||||||:||||||||||||||||||||||||||||||||||||
Db 1 EDWLTFQKKHITNTRDVDCDNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

Qy 61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
|||||||||||||||||||| |||||||||||||||| |
Db 61 SEFYLSDCNVTSRPCKYKLKKSTNKFCVTCENQAPVHFVGVGSC 104

RESULT 13
AAR12344
ID AAR12344 standard; protein; 104 AA.
XX
AC AAR12344;
XX
DT 08-AUG-1991 (first entry)
XX
DE Protein with activity against cancer cells.
XX
KW Frog eggs; Tamoxifen; Stelazine; cancer.
XX
OS Rana pipiens.
XX
PN WO9107435-A.
XX
PD 30-MAY-1991.
XX
PF 26-OCT-1990; 90WO-US06185.
XX
PR 18-MAY-1990; 90US-0526314.
PR 13-NOV-1989; 89US-0436141.
XX
PA (ALFA-) ALFACELL CORP.
XX
PI Ardelt WJ, Mikulski SM;
XX
DR WPI; 1991-178059/24.
XX
PT New protein from fertilised eggs of Rana pipiens - active against
PT cancer cells, esp. in combination with Tamoxifen or Stelazine
PT (trifluoro-per-azine).
XX
PS Claim 7; Fig 2; 33pp; English.
XX
CC The protein is derived from fertilised frogg eggs. It has an iso-
CC electric point of 9.5 - 10.5, a blocked N-terminal gp. and is free
CC of carbohydrates. It is active against certain cancer cells. The
CC combination of the protein and (z-1-p-dimethylaminoethoxyphenyl-1,
CC 2-diphenyl-1-butene) citrate salt (Tamoxifen) is much more bio-
CC active than the separate entities against human pancreatic ASPC-1
CC adenocarcinoma, and the combination of protein and (10-[3-(4-methyl
CC piperazin-1-yl)-propyl]-2-trifluoromethylphenothiazine (Stelazine)
CC is much more reactive than the separate entities against human lung
CC A-549 carcinoma. Activity has also been shown against human sub-
CC maxilliary epidermoid carcinoma A-253 cells, human ovarian adeno-
CC carcinoma NIH-OVCAR-3 cells, human leukaemic HL-60 cells, human
CC COLO 320 DM cells, human LOX melanoma and human lung squamous car-
CC cinoma HT-520 cells.
XX
SQ Sequence 104 AA;

Query Match 94.0%; Score 544; DB 12; Length 104;
Best Local Similarity 93.3%; Pred. No. 5e-59;
Matches 97; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

Qy 1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
:|||||||||:|||||||:||:||||||||||||||||||||||||||||||||||
Db 1 EDWLTFQKKHITNTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

Qy 61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
|||||||||||||||||||| |||||||||||||||| |
Db 61 SEFYLSDCNVTSRPCKYKLKKSTNKFCVTCENQAPVHFVGVGSC 104

RESULT 14
AAR47303
ID AAR47303 standard; protein; 104 AA.
XX
AC AAR47303;
XX
DT 09-SEP-1994 (first entry)
XX
DE ONCONASE (pharmaceutical protein).
XX
KW Onconase; phamaceutical; protein; adenocarcinoma; treatment;
KW cisplatin; melphalan; adriamycin; ovarian cancer; ovary.
XX
OS Synthetic.
XX
PN WO9403197-A.
XX
PD 17-FEB-1994.
XX
PF 02-JUL-1993; 93WO-US06357.
XX
PR 30-JUL-1992; 92US-0921180.
XX
PA (ALFA-) ALFACELL CORP.
XX
PI Ardelt WJ, Mikulski SM;
XX
DR WPI; 1994-065396/08.
XX
PT Pharmaceutical contg. Cisplatin, Melphalan or Adriamycin - active
PT in=vitro against OVCAR-3 human ovarian adrenocarcinoma cells
XX
PS Claim 7; Page 13; 18pp; English.
XX
CC This pharmaceutical protein (ONCONASE) is used in the production of
CC a bioactive pharmaceutical composition also comprising one of
CC Cisplatin (cis-diamminedichloroplatinum), Melphalan, (4-[bis-(2-
CC chloroethyl)amino]-L-phenylamine) or Adriamycin (Doxorubicin HCl).
CC The composition has bioactivity in vitro against OVCAR-3 human
CC ovarian adenocarcinoma cells.
XX
SQ Sequence 104 AA;

Query Match 94.0%; Score 544; DB 15; Length 104;

```
  Best Local Similarity   93.3%;  Pred. No. 5e-59;
  Matches   97;  Conservative    4;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
              :|||||||||:||||||||:||:||||||||||||||||||||||||||||||||||||||
Db          1 EDWLTFQKKHITNTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
                |||||||||||||||||||||| |||||||||||||||| |
Db         61 SEFYLSDCNVTSRPCKYKLKKSTNKFCVTCENQAPVHFVGVGSC 104


RESULT 15
AAW00736
ID   AAW00736 standard; protein; 104 AA.
XX
AC   AAW00736;
XX
DT   22-MAY-1997  (first entry)
XX
DE   Protein derived from frogs eggs.
XX
KW   Rana pipiens; ovarian adenocarcinoma NIH-OVCAR03 cell; frog; egg;
KW   submaxillary epidermoid carcinoma A-253 cell; tumour; human;
KW   leukaemic HL-60 cell; COLO 320 DM cell; colon adenocarcinoma;
KW   LOX melanoma; lung squamous carcinoma HT-520 cell.
XX
OS   Rana pipiens.
XX
PN   US5559212-A.
XX
PD   24-SEP-1996.
XX
PF   06-APR-1988;   88US-0178118.
XX
PR   03-FEB-1992;   92US-0814332.
PR   06-APR-1988;   88US-0178118.
PR   13-NOV-1989;   89US-0436141.
PR   01-AUG-1994;   94US-0283970.
XX
PA   (ALFA-) ALFACELL CORP.
XX
PI   Ardelt WJ;
XX
DR   WPI; 1996-442459/44.
XX
PT   New isolated Rana pipiens frog protein - useful for the treatment of
PT   tumours.
XX
PS   Claim 1; Column 8; 7pp; English.
XX
CC   This sequence represents a protein which was prepared by homogenisation
CC   of Rana pipiens frogs eggs.  This protein is used for treating tumours
CC   in humans.  Especially this protein was active against human
CC   submaxillary epidermoid carcinoma A-253 cells, human ovarian
CC   adenocarcinoma NIH-OVCAR03 cells, human leukaemic HL-60 cells, human
CC   COLO 320 DM cells originally isolated from colon adenocarcinoma, human
CC   LOX melanoma and human lung squamous carcinoma HT-520 cells.
XX
SQ   Sequence   104 AA;

  Query Match             94.0%;  Score 544;  DB 17;  Length 104;
  Best Local Similarity   93.3%;  Pred. No. 5e-59;
  Matches   97;  Conservative    4;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
              :|||||||||:||||||||:||:||||||||||||||||||||||||||||||||||||||
Db          1 EDWLTFQKKHITNTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

Qy         61 FEFYLSDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFVGVGHC 104
                |||||||||||||||||||||| |||||||||||||||| |
Db         61 SEFYLSDCNVTSRPCKYKLKKSTNKFCVTCENQAPVHFVGVGSC 104
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Job time : 31.2 secs